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ABSTRACT

Children's tendency to answer attitude questions in a biased manner, favoring latter response alternatives when two alternatives are presented in a forced-choice format, was investigated. Using a forced-choice interview format, children were asked questions concerning their attitudes toward mathematics. Each question contained two evaluative alternatives from which children selected in responding to the questions. The results supported the hypothesis that three- to five-year-old children are more likely to choose latter response alternatives than are six- to eight-year-old children. Topic word abstractness was not found to influence children's use of the recency response set. In six- to eight-year-old children, understanding of the topic word concept was related to the frequency with which latter response alternatives were chosen. Caution is suggested in using orally-administered self-report methods to assess the attitudes of young children. Further research on the recency response set is recommended. (Author/AL)

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USING CHILDREN'S SELF-REPORTS TO MEASURE ATTITUDES: FACTORS INFLUENCING A RECENCY RESPONSE SET

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A brief version of this paper was presented at the annual meeting of the American Educational Research Association, Los Angeles, April, 1981.

Abstract

The study examined children's tendency to answer attitude questions in a biased manner, favoring latter response alternatives when two alternatives are presented in a forced-choice format. Using a forced-choice interview format, children were asked questions concerning their attitudes toward mathematics. Each question contained two evaluative alternatives from which children selected in responding to the questions. The results supported the hypothesis that three to five year old children are more likely to choose latter response alternatives than are six to eight year old children. Topic word abstractness was not found to influence children's use of the recency response set. In six to eight year old children, understanding of the topic word concept was related to the frequency with which latter response alternatives were chosen. Further research on the recency response set is needed to replicate and clarify these findings and to determine other factors influencing the operation of the recency response set.

USING CHILDREN'S SELF-REPORTS TO MEASURE ATTITUDES: FACTORS INFLUENCING A RECENCY RESPONSE SET

Adults often ask children questions to try to ascertain their attitudes. In doing this, it is commonplace to include alternative response options in the questions, as in, for example, the question: "Do you like math or do you hate math?" This paper describes a study investigating young children's tendency to respond in a biased way by choosing the latter options in such questions, irrespective of their substantive meanings. The study investigates the effects of three variables on the tendency to choose the latter response option. These variables are age, comprehension of the topic concept, and abstractness of the topic concept.

Student attitude data can be useful in helping to evaluate the effectiveness of educational programs and instructional techniques (Sax, 1974; Anastasi, 1976; Tuckman, 1979). Information about student attitudes can also be important in helping to guide the choice of instruction that is tailored to the needs of the individual student (Sax, 1974). Although most measures of students' attitudes toward instruction have been used in higher education settings (Tuckman, 1979), recent social developments are placing greater emphasis on attitude assessment with young children. Such developments include: 1) increased public concern with early childhood development and the concurrent emergence of massive preschool programs such as Head Start, as well as numerous local preschool programs around the country; 2) substantial increases in the proportion of young children whose mothers are working outside the home, whose parents are therefore

concerned with evaluating the effects of particular day care and preschool programs on their children's development; 3) increased value placed on the affective outcomes of education: and 4) greater attention given to the systematic evaluation of educational programs.

Further research is needed to clarify the exigencies of developing or selecting attitude measurement techniques that are suitable for use with young children. Most of the strategies for measuring attitudes that have been described in the educational and psychological assessment literature seem more appropriate for use with older children and adults than for use with young children.

Self-report methods are the most frequently used means of assessing attitudes (Popham, 1975). The effectiveness of using self-report methods to assess attitudes necessitates that the respondent is able to respond accurately (Gronlund, 1976). One important consideration in evaluating the appropriateness of using self-report methods to measure attitudes may be the age of the respondent. Little is presently known about the influence of developmental factors in shaping children's responses to such questions. It has been suggested that a set of stimuli for eliciting an individual's attitudes should include positive and negative concepts that are opposite in meaning. When such stimuli are presented, the evocation of responses reflecting preschool children's attitudes is considered feasible, given that the topic and evaluative words are understood and have common meanings to all respondents (McMurtry & Williams, 1972). However, several investigators have acknowledged difficulties in their attempts to assess attitudes in young

children. A number of techniques for assessing attitudes in older children and adults may not be satisfactory with young children because of the young respondents' lack of the prerequisite skills required for such situations (Williams & Roberson, 1967; Ball, 1971). When self-report methods of attitude assessment are used, the responses of young children to attitude questions may be considerably influenced by specific situational considerations, such as the positions of the response alternatives (Adkins & Ballif, Note 1).

A developmental framework is proposed to help explain the susceptibility of young children to respond to superficial aspects of the attitude questions rather than to their substantive meanings. A person's attitude should be distinguishable from contrary views. Young children may be developmentally incapable of accurately distinguishing their points of view from opposing points of view, particularly when orally presented with two or more response alternatives from which to choose. Perhaps strategies for assessing a young child's attitude should take into account the child's level of cognitive functioning.

The preschool child is characterized as "egocentric," as operating only from his or her own point of view. It appears that the young child is insensitive to the fact that the way in which he or she views a stimulus is only one construction among many possible ones (Hohn & Swartz, Note 2). The ability to consider alternative viewpoints may require the acquisition of the concept of projective space, believed to occur during a

child's early elementary school years (Lovell, 1961). As the child ages, a change in perspective occurs, "in which the viewpoints and behaviors of other individuals are seen as progressively more and more distinct from one's own" (Hohn & Swartz, Note 2, p. 11). As these perceptual changes occur, children begin to think of objects in relation to a point of view (Piaget & Inhelder, 1956). It is suggested that young children who have not developed this concept of projective space have greater difficulty than do older children in distinguishing their attitudes from contrary ones.

When children lacking well-formulated attitudes are asked to make attitudinal evaluations, it is likely that they respond on other grounds than those reflecting their attitudes. Thus, the responses of young children may be more susceptible than those of older children to influence by superficial aspects of the measurement situation. When an individual repeatedly responds to a superficial dimension of an attitude measurement device, he or she is said to be operating with a response set (Mehrens & Lehmann, 1975). This tendency is an important threat to the validity of the measurement situation in eliciting accurate responses concerning the individual's attitudes. There is some evidence suggesting that preschool children are susceptible to response sets in attitude measurement situations (Adkins & Ballif, Note 1; Ball, 1971).

One of the most readily available responses to the child is that of merely repeating the last response option verbalized in a question. This bias has been described by Adkins & Ballif (Note 1) as a recency response set. It is hypothesized that children of three to five years old select the latter response option more frequently from orally administered alternatives than do children of six to eight years old.

Other variables besides the respondent's age may influence the degree to which he or she is biased toward selecting the latter response option. The present study also examines the abstractness of the topic concept as a possible influence of the recency response set. In this context, the topic concept refers to the topic of the attitude questions. Direct references to particular objects or events chacterize relatively concrete stimuli. Abstract tasks necessitate consideration of more dimensions of time and space than do concrete tasks (Paivio, 1971). Consequently, attitude questions concerning a relatively abstract topic would be considered more difficult than those concerning a relatively concrete topic. Finding questions difficult, children may be more likely to respond to superficial considerations. Children responding to a relatively abstract topic concept, therefore, are hypothesized to choose more latter response options from orally administered alternatives than do children responding to a relatively concrete topic concept.

Children's understanding of the topic concept may also be related to their tendency to operate with a recency response set in choosing alternatives from orally administered attitude questions. Understanding the topic concept may increase responsiveness to the substance of the attitude questions; whereas a lack of understanding may increase responsiveness to trivial characteristics of the measurement situation, such as the position of response alternatives. Evidence concerning a related concept, item ambiguity, suggests that ambiguous items are especially likely to elicit responses that are influenced by a response set (Cronbach, 1950). Children who do not understand the topic concept are hypothesized to select more latter response options from orally administered alternatives than do children who understand the topic concept.

Method

Forty-eight subjects, 22 males and 26 females, participated in the study. Subjects ranged from three to eight years old, with eight subjects included for each of the six age levels (three years old, four years old, etc.). All subjects were attending summer school programs in a moderately large metropolitan area.

Sets of attitude questions, each containing 16 cards, were used in the study. On each card was printed one attitude question which provided two evaluative options, such as "like/hate" and "good/bad." Half of the sets used "counting and colors" as the topic concept, whereas the remaining half of the sets used "math" as the topic concept. In one form of the question sets, the positive response option appeared first in a randomly chosen set of eight questions and appeared second in the other eight questions. In another form of the question sets, the positions of the positive and negative response options were reversed.

Within each age group, four subjects were randomly selected to be interviewed using the relatively abstract topic concept sets, and the remaining four subjects were selected to be interviewed with the relatively concrete topic concept sets. Subjects were also each randomly assigned to one of the two response position forms of the question sets. Subjects were interviewed individually. Each was first questioned to assess familiarity with the particular topic concept on which the interview would focus. Subjects successfully answering one of three standard questions about "counting and colors," or providing a numerical or relational response to the question "What do you think math is?" were judged to understand the topic concept. Feedback concerning correctness of response

was not provided to subjects. Each subject was instructed to listen very carefully to each question, and to respond only after hearing the entire question. The subject was then asked all sixteen questions, with the cards within each condition having been previously shuffled to appear in a random order for each subject. The interviewer asked each question in a standard manner, avoiding giving special emphasis to either response option, and noting the response on a data sheet.

Results

An analysis of covariance was performed on the number of latter response options chosen. Age and topic concept abstractness were the independent variables in this analysis. Topic understanding was covaried, as it was confounded with age and topic abstractness. Means and standard deviations, computed in each of the major conditions, are shown in Table 1.

Insert Table 1 about here

The results revealed a significant main effect of age on the frequency of choosing latter response alternatives, F (1, 46) = 14.761, $p < .001$. There was a considerable difference in the number of latter response alternatives chosen by the preschool age children and the older children. Of a total of 16 latter response alternatives, the mean number chosen by three to five year old children was 11.7, whereas the mean number chosen by six to eight year old children was 8.2, a difference of 3.5. The interaction and effect of topic abstractness in this analysis were not found to be statistically significant.

There was a lack of variation in the children's understanding of the relatively concrete topic concept, with all children demonstrating that

they understood it. This confounding of topic understanding with abstractness necessitated a separate analysis of the effects of understanding the topic concept. Topic understanding was chosen for separate analysis rather than topic abstractness because inclusion of topic understanding in the main analysis as an independent variable would have resulted in empty cells for the analysis whereas the inclusion of topic abstractness as an independent variable did not result in empty cells in the design. A separate t test revealed that children who did not understand the topic concept selected significantly ($p < .01$) more latter response options ($\bar{X}_1 = 11.5$) than did children who understood the topic concept ($\bar{X}_2 = 9.2$). In another t test, it was found that children who did not understand the topic concept obtained significantly ($p < .05$) lower attitude scores than did children who understood the topic concept (with respective mean attitude scores of 11.3 and 12.9).

Discussion

The results of this study suggest that the responses of preschool children to orally presented forced-choice attitude questions are more likely to be influenced by a recency response set than are the responses of older children. This interpretation is supported by the finding that three to five year old children selected more latter response options than did six to eight year old children. This finding is congruent with the notion that preschool age children are less capable than are older children of responding to the substantive content of self-report attitude questions, and thus are more susceptible to responding to superficial aspects of such questions. This finding was predicted because older children are thought to be better able than are preschool children to

consider alternative viewpoints in responding to a forced-choice attitude question.

The evidence is congruent with what would be expected if the attainment of the concept of projective space is an important prerequisite to being able to distinguish one's viewpoint from alternative viewpoints; however, it does not directly document this contingency. Instead, the evidence is indirect, suggesting that a variable thought to be highly associated with the attainment of the concept of projective space--age--is inversely related to the tendency to respond to a superficial characteristic of attitude questions. Future research on the recency response bias in young children is planned to include a measure of the attainment of the concept of projective space to permit a direct examination of the relationship between the attainment of this concept and the reduced tendency to operate with a recency response bias.

This study did not find a significant influence of topic concept abstractness on the number of latter response options. The reasons for this are not clear. Perhaps topic concept abstractness does not affect children's ability to attend to the substantive content of attitude questions. Alternatively, perhaps the use of two terms in the concrete manipulation used in this study, as compared to the use of one term in the abstract manipulation, weakened the power of the former manipulation.

In this study, topic concept understanding was related to age and topic concept abstractness, making it impossible to determine its independent effects on the recency response set. When analyzed separately, it demonstrated a relationship to the number of latter response options chosen. This is congruent with the attribution that a lack of understanding of a topic concept in an attitude question may increase responsiveness to superficial characteristics of the measurement scheme.

A post hoc analysis revealed that the effect of understanding was operating primarily in the six to eight year old children who varied in their understanding of the term "math." Further research is needed to distinguish the effect of topic concept understanding from the effect of age, and also to examine for the possibility of an interaction between them. Also, of course, future research regarding the operation of the recency response set in young children should attempt to replicate, clarify, and generalize this study's results with different samples of children, interviewers, and attitude questions.

The recency response set may also be influenced by characteristics of the wording of response alternatives. Research examining response alternatives could define characteristics of alternative referent modifiers by using word association tasks similar to those used by Di Vesta (1965).

This study provides some evidence that age and topic concept understanding are associated with the tendency to operate with a recency response set. Future research on the recency response set should demonstrate that the variables associated with it are also associated with lower criterion validity and equivalent forms reliability, as an interest in the recency response set is founded on a concern with its deleterious effects on the reliability and validity of forced-choice measures.

The significance of this study is in providing evidence suggesting that the responses to forced-choice attitude interviews of preschool children or children who do not understand the topic concept may be influenced by the operation of a recency response set. When the positions of the response alternatives are counterbalanced for favorability, as they are in this study, the degree to which children operate with the recency response set will be reflected in their obtaining attitude scores toward the middle of the range of possible scores. To the extent that the

favorable response options appear last, children operating with a recency response bias will tend to obtain inflated attitude scores; whereas the attitude scores of such children will tend to be deflated to the extent that the unfavorable alternatives appear last.

Where the recency response set seems to have influenced children's responses to attitude questions, caution is warranted in interpreting the results. The effects of the recency response set can have important consequences when using attitude responses to try to make decisions about individual children or programs. For example, if it is not realized that a recency response bias has deflated the attitude scores of children in a particular educational program, the scores may be interpreted in ways that adversely affect future policy or funding decisions concerning the program. Such contingencies are, of course, to be avoided, and the possibility of such response biases affecting children's responses to a particular measurement device underscores the need for using a triangulation approach (Popham, 1975) when assessing attitudes.

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Table 1

Means and Standard Deviations for the Effects of Age, Topic Abstractness, and Topic Understanding on Recency Responses and Attitude Score

Variable	Number of Recency Responses		Attitude Score	
	Mean	SD	Mean	SD
Age				
3-5 years	11.67**	2.35	10.83**	2.22
6-8 years	8.21**	1.93	13.96**	1.71
Topic Abstractness				
Concrete	9.92	2.75	12.42	2.55
Abstract	9.96	2.82	12.38	2.53
Topic Understanding				
Not understood	11.47**	2.42	11.33*	2.38
Understood	9.24**	2.65	12.88*	2.46

Note. Maximum score = 16.

*$p < .05$. **$p < .01$.